WHAT IS CLAIMED IS:

1. A method comprising the steps:
   a. exposing at least a portion of a conjunctiva surface of a subject to electromagnetic radiation;
   b. detecting electromagnetic radiation reflected from said conjunctiva; and,
   c. determining a radiation signature of said reflected electromagnetic radiation to determine an analyte concentration in a tissue of said subject.

2. The method of Claim 1, wherein said method is non-invasive and wherein said subject is a human.

3. The method of Claim 1, wherein said analyte is selected from the group consisting of metabolic compounds or substances, carbohydrates, sugars, glucose, proteins, peptides, amino acids, fats, fatty acids, triglycerides, polysaccharides, alcohols, ethanol, toxins, hormones, vitamins, bacteria-related substances, fungus-related substances, virus-related substances, parasite-related substances, pharmaceutical compounds, non-pharmaceutical compounds, pro-drugs, drugs, and any precursor, metabolite, degradation product or surrogate marker.

4. The method of Claim 3, wherein said analyte is glucose.

5. The method of Claim 1, wherein said electromagnetic radiation is mid-infrared radiation.

6. The method of Claim 5, wherein the mid-infrared radiation is in a wavelength range of about 2.5 microns to about 25.0 microns.

7. The method of Claim 1, wherein said detecting step further comprises selecting at least one wavelength within said reflected electromagnetic radiation.

8. The method of Claim 7, wherein said selecting of said reflected electromagnetic radiation further comprises filtering said reflected electromagnetic radiation.

9. The method of Claim 1, wherein said determining step further comprises using a microprocessor.

10. The method of Claim 1, wherein said reflected electromagnetic radiation comprises infrared radiation having a wavelength range between about 2.5 microns to about 25.0 microns.

11. The method of Claim 10, wherein said reflected infrared radiation is within the wavelength range between about 2.5 microns to about 11.0 microns.

12. A computer system for downloading and storing data collected according to Claim 1, comprising:

a. a computer processor;

b. a memory which is operatively coupled to said computer processor;

c. a communications interface adapted to receive and send data within said computer processor; and

d. a computer program stored in said memory which executes in said computer processor.

13. A method of downloading and storing a subject's measured analyte concentration, comprising the steps of:

a. measuring said analyte concentration according to the method of Claim 1 using a non-invasive instrument having a communications interface;

b. connecting said non-invasive instrument through said communications interface to a computer system having a computer processor, a computer program which executes in said computer processor, and an analogous communications interface; and

c. downloading from said non-invasive instrument to said computer system said measured analyte concentrations.